इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”
Mazdoor Kisan Shakti Sangathan
“The Right to Information, The Right to Live”

“पुराने को छोड नये के तरफ”
Jawaharlal Nehru
“Step Out From the Old to the New”

IS 14863 (2000): Turning and Copying Tool Holders and Cartridges for Indexable Inserts - Designation [PGD 32: Cutting tools]

“ज्ञान से एक नये भारत का निर्माण”
Satyanarayan Gangaram Pitroda
“Invent a New India Using Knowledge”

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”
Bhartṛhari—Nītiśatakam
“Knowledge is such a treasure which cannot be stolen”

BLANK PAGE

BRUTUM FULMEN
IGNORANTIA JURIS NON EXCUSAT
PROTECTED BY COPYRIGHT

IS 14863 : 2000
ISO 5608 : 1995
(Reaffirmed 2005)

भारतीय मानक

बदले जा सकने वाले इंसर्टों के लिए टर्निंग और कॉपिंग औजार धारक तथा कार्टिज – अभिनाम

Indian Standard

TURNING AND COPYING TOOL HOLDERS AND CARTRIDGES FOR INDEXABLE INSERTS — DESIGNATION

ICS 25.100.10

© BIS 2000

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

October 2000

Price Group 6

Single Point Cutting Tools, Carbide Tips and Indexable Inserts Sectional Committee, BP 12

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 5608:1995 'Turning and copying tool holders and cartridges for indexable inserts — Designation' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendations of the Single Point Cutting Tools, Carbide Tips and Indexable Inserts Sectional Committee and approval of the Basic and Production Engineering Division Council.

The text of the ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Comma (,) has been used as a decimal marker in the International Standard while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

b) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'.

In the adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 5610:1995 Single - point tool holders for turning and copying, for indexable inserts — Dimensions	IS 14866 : 2000 Single point tool holders for turning and copying for indexable inserts — Dimensions	Identical
ISO 5611:1995 Cartridges, type A, for indexable inserts — Dimensions	IS 14867:2000 Cartridges, Type A, for indexable inserts — Dimensions	Identical

Indian Standard

TURNING AND COPYING TOOL HOLDERS AND CARTRIDGES FOR INDEXABLE INSERTS — DESIGNATION

1 Scope

This International Standard establishes a code for the designation of turning and copying tool holders and cartridges with a rectangular shank having a standardized dimension f (see ISO 5610 and ISO 5611), intended for indexable inserts, thus simplifying orders and specifications for such tools.

The designation of boring bars (tool holders with cylindrical shank) is given in ISO 6261.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 5610:1995, *Single-point tool holders for turning and copying, for indexable inserts — Dimensions.*

ISO 5611:1995, *Cartridges, type A, for indexable inserts — Dimensions.*

3 Explanation of the designation code

The designation code comprises ten symbols for the designation of dimensions and other characteristics of the tool and the insert, of which the first nine symbols shall be used in any designation. The last symbol may be used when necessary.

In addition to the standardized designation [symbols in positions (1) to (10)], a supplementary symbol consisting of a maximum of three letters and/or numbers may be added by the manufacturer for a better description of his products, on condition that this symbol is separated from the standardized designation by a dash and that it does not contain letters specified for position (10).

No addition to or extension of the code specified in this International Standard shall be made without consultation with Technical Committee ISO/TC 29 and its agreement. Rather than adding symbols not provided for in this system, it is preferable to add to the designation conforming with this International Standard all necessary explanations in detailed sketches or specifications.

The meaning of the nine compulsory symbols and one optional symbol constituting the code is as follows:

(1)	Letter symbol identifying the method of holding the insert (see 4.1)	Compulsory symbols
(2)	Letter symbol identifying insert shape (see 4.2)	
(3)	Letter symbol identifying tool style (see 4.3)	
(4)	Letter symbol identifying insert normal clearance (see 4.4)	
(5)	Letter symbol identifying hand of tool (see 4.5)	
(6)	Number symbol identifying tool height (shank height of tool holders and height of cutting edge) (see 4.6)	
(7)	Number symbol identifying tool holder shank width or, for cartridges, letter C followed by a letter symbol identifying the cartridge type (see 4.7)	
(8)	Letter symbol identifying tool length (see 4.8)	
(9)	Number symbol identifying indexable insert size (see 4.9)	
(10)	Letter symbol indicating special tolerances (see clause 5)	Optional symbol

NOTE 1 The codes (2), (4) and (9) are in accordance with ISO 1832.

EXAMPLE

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
C	**T**	**G**	**N**	**R**	**32**	**25**	**M**	**16**	**Q**

4 Compulsory symbols

4.1 Symbol for the method of holding the horizontally mounted insert — Reference position (1)

Table 1

Letter symbol	Method of holding the insert
C	Top clamping (insert without hole)
M	Top and hole clamping (insert with hole)
P	Hole clamping (insert with hole)
S	Screw clamping through hole (insert with hole)

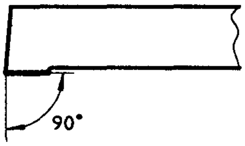
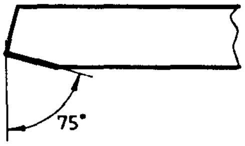
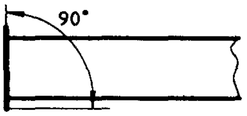
4.2 Symbol for insert shape — Reference position (2)

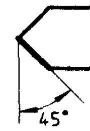
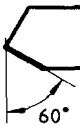
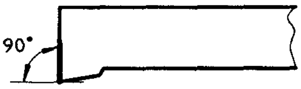
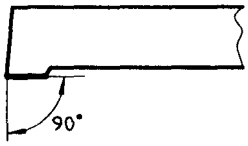
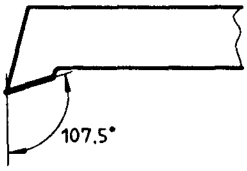
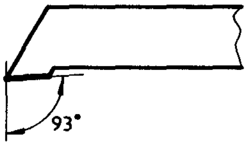
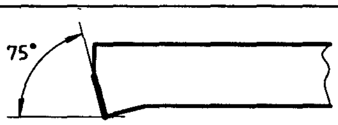
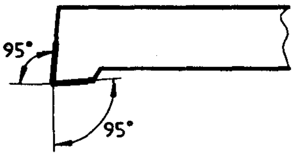
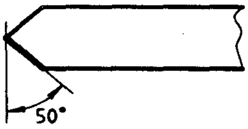
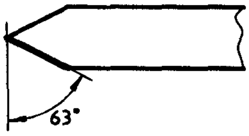
Table 2

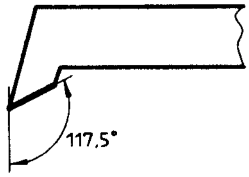
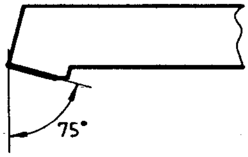
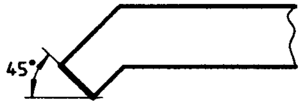
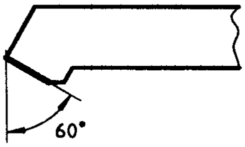
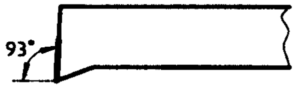
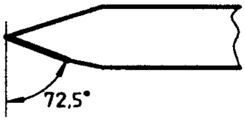
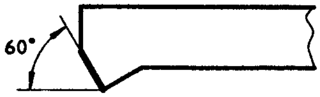
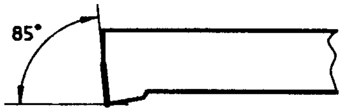
Letter symbol	Insert shape	Insert type
H **O** **P** **S** **T**	Hexagonal Octagonal Pentagonal Square Triangular	Equilateral and equiangular
C **D** **E** **M** **V** **W**	Rhombic with 80° included angle Rhombic with 55° included angle Rhombic with 75° included angle Rhombic with 86° included angle Rhombic with 35° included angle Hexagonal with 80° included angle	Equilateral and non-equiangular
L	Rectangular	Non-equilateral and equiangular
A **B** **K**	Parallelogram-shaped with 85° included angle Parallelogram-shaped with 82° included angle Parallelogram-shaped with 55° included angle	Non-equilateral and non-equiangular
R	Round	Round
NOTE — The included angle is always the smaller angle.		

4.3 Symbol for tool style — Reference position (3)

Table 3

Letter symbol	Tool style	
A		90° cutting edge angle, straight shank, for side cutting
B		75° cutting edge angle, straight shank, for side cutting
C		90° cutting edge angle, straight shank, for end cutting

Letter symbol	Tool style	
D 1)		45° cutting edge angle, straight shank, for side cutting
E		60° cutting edge angle, straight shank, for side cutting
F		90° cutting edge angle, offset shank, for end cutting
G		90° cutting edge angle, offset shank, for side cutting
H		107,5° cutting edge angle, offset shank, for side cutting
J		93° cutting edge angle, offset shank, for side cutting
K		75° cutting edge angle, offset shank, for end cutting
L		95° cutting edge angles on both cutting edges, offset shank, for side and end cutting
M		50° cutting edge angle, straight shank, for side cutting
N		63° cutting edge angle, straight shank, for side cutting

Letter symbol	**Tool style**	
P		117,5° cutting edge angle, offset shank, for side cutting
R		75° cutting edge angle, offset shank, for side cutting
S 1)		45° cutting edge angle, offset shank, for side cutting
T		60° cutting edge angle, offset shank, for side cutting
U		93° cutting edge angle, offset shank, for end cutting
V		72,5° cutting edge angle, straight shank, for side cutting
W		60° cutting edge angle, offset shank, for end cutting
Y		85° cutting edge angle, offset shank, for end cutting

1) Tools of styles D and S may be equipped also with round inserts (shape R).

4.4 Symbol for the insert normal clearance — Reference position (4)

Table 4

Letter symbol	Insert normal clearance
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°

NOTE — For non-equilateral inserts, the letter symbol applies to the normal clearance of the longer side.

4.5 Symbol for hand of tool — Reference position (5)

Table 5

Letter symbol	Hand of tool
R	Right hand
L	Left hand
N	Either hand

4.6 Symbol for tool height — Reference position (6)

4.6.1 Tool holders with rectangular shank cross-section and height of cutting edge h_1 equal to shank height h (see figure 1)

The number symbol for the tool height is the value of the shank height h, in millimetres. If the resulting symbol has only one digit, it shall be preceded by 0 (zero).

EXAMPLES

For $h = 32$ mm, the symbol is 32.

For $h = 8$ mm, the symbol is 08.

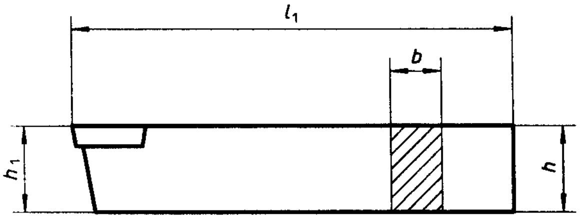


Figure 1

4.6.2 Cartridges with height of cutting edge h_1 not equal to shank height h (see figure 2)

The number symbol for the tool height is the value of the height of the cutting edge, h_1, in millimetres. If the resulting symbol has only one digit, it shall be preceded by 0 (zero).

EXAMPLES

For h_1 = 12 mm, the symbol is 12.

For h_1 = 8 mm, the symbol is 08.

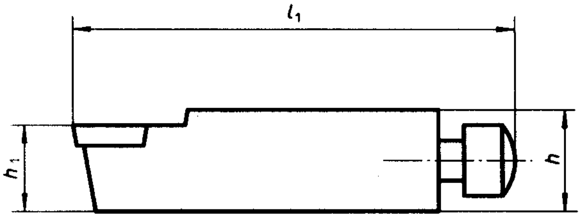


Figure 2

4.7 Symbol for tool width — Reference position (7)

4.7.1 Tool holders with rectangular shank cross-section (see figure 1)

The number symbol for the tool width is the value of the shank width b, in millimetres. If the resulting symbol has only one digit, it shall be preceded by 0 (zero).

EXAMPLES

For b = 25 mm, the symbol is 25.

For b = 8 mm, the symbol is 08.

4.7.2 Cartridges (see figure 2)

When no indication of shank width is given, a two-letter symbol is indicated instead. The first letter is always **C** (cartridge) and the second letter identifies the cartridge type. The second letter is specified in the dimensional standards, for example type A in accordance with ISO 5611.

4.8 Symbol for tool length — Reference position (8)

The letter symbol for the tool length shall be chosen from table 6.

For standardized tools where for each tool dimension only one length is specified, the letter symbol for tool length may be replaced by a dash.

For standardized cartridges having a tool length l_1 for which no letter symbol is provided in table 6 (for example l_1 = 44 mm), the symbol in position (8) shall be a dash.

Table 6

Letter symbol	**Tool length**, mm (l_1 in figures 1 and 2)
A	32
B	40
C	50
D	60
E	70
F	80
G	90
H	100
J	110
K	125
L	140
M	150
N	160
P	170
Q	180
R	200
S	250
T	300
U	350
V	400
W	450
X	Special length, to be specified
Y	500

4.9 Symbol for indexable insert size — Reference position (9)

Table 7

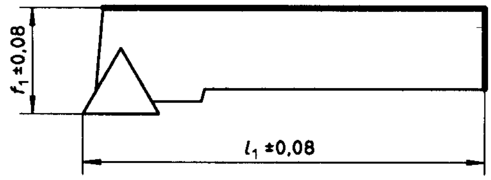
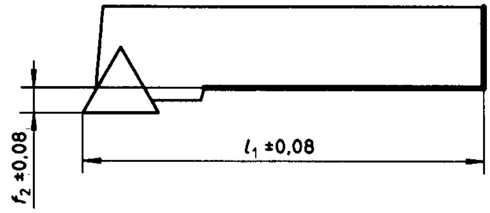
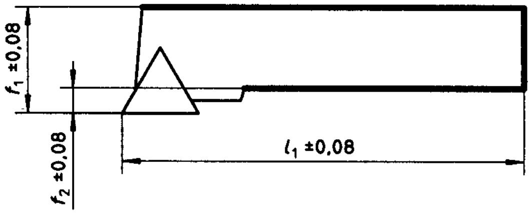
Insert type	Number symbol
Equilateral and equiangular (H, O, P, S, T) and equilateral and non-equiangular (C, D, E, M, V, W)	The symbol of designation for the insert size is the edge length, disregarding any decimals. EXAMPLE Edge length: 16,5 mm Symbol of designation: 16
Non-equilateral and equiangular (L) and non-equilateral and non-equiangular (A, B, K)	The symbol of designation for the insert size is always the length of the major cutting edge or of the longer cutting edge, disregarding any decimals. EXAMPLE Length of the major cutting edge: 19,5 mm Symbol of designation: 19
Round (R)	The symbol of designation for the insert size is always the diameter, disregarding any decimals. EXAMPLE Diameter: 15,875 mm Symbol of designation: 15
NOTE — When the symbol resulting from the retained part of the value of a metric dimension has only one digit, it shall be preceded by 0 (zero). EXAMPLE Edge length: 9,525 mm Symbol of designation: 09	

5 Optional symbol: Symbol for special tolerances — Reference position (10)

A qualified tool is a tool with dimensions f_1, f_2 and l_1 (see the sketches in table 8) having tolerances of ± 0,08 mm.

Table 8

Tolerances in millimetres

Letter symbol	Qualification of tool	Sketch
Q	Back and end qualified tool	
F	Front and end qualified tool	
B	Front, back and end qualified tool	

Annex A
(informative)

Bibliography

[1] ISO 1832:1991, *Indexable inserts for cutting tools — Designation.*

[2] ISO 6261:1995, *Boring bars (tool holders with cylindrical shank) for indexable inserts — Designation.*

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act,* 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Handbook' and 'Standards: Monthly Additions'.

This Indian Standard has been developed from Doc : No. BP 12 (0031)/PE 12 (0234).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters :

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110 002
Telephones : 323 01 31, 323 33 75, 323 94 02

Telegrams : Manaksanstha
(Common to all offices)

Regional Offices :

Regional Offices	Address	Telephone
Central	Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110 002	323 76 17 323 38 41
Eastern	1/14 C. I. T. Scheme VII M, V. I. P. Road, Kankurgachi CALCUTTA 700 054	337 84 99, 337 85 61 337 86 26, 337 91 20
Northern	SCO 335-336, Sector 34-A, CHANDIGARH 160 022	60 38 43 60 20 25
Southern	C. I. T. Campus, IV Cross Road, CHENNAI 600 113	235 02 16, 235 04 42 235 15 19, 235 23 15
Western	Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400 093	832 92 95, 832 78 58 832 78 91, 832 78 92

Branches : AHMADABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM.

Printed at : Prabhat Offset Press, New Delhi-2